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09/856,175	06/04/2001	Hiromu Ueshima	100341-00008	9628

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EXAMINER	
PAPPAS, PETER	

ART UNIT	PAPER NUMBER
2628	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)
	09/856,175	UESHIMA ET AL.
	Examiner	Art Unit
	PETER-ANTHONY PAPPAS	2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 20 August 2008.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1,3-5,9-12 and 14-51 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,3-5,9-12 and 14-51 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 04 June 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. 11/17/08 .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. As indicated in the interview held on 11/17/08 the Office Action mailed on 11/14/08 has been vacated.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claim 26 of the instant application provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of copending Application No. 11/595, 865, herein referred to as '865.

This is a provisional obviousness-type double patenting rejection.

4. In regard to claim 26 of the instant application claim 2 of '865 teaches: an input device to be moved in a three-dimensional space by a game player; signal output means incorporated in said input device to output an acceleration correlated signal

according to an acceleration upon moving said input device in the three-dimensional space; a game processor which receives said acceleration correlated signal and controls the movement of a ball character in accordance with said acceleration correlated signal; determining a course (e.g., direction) of said ball character (claim 1, ll. 4-11; claim, ll. 2-4). However, '865 fails to explicitly teach that the course (e.g., direction) of said ball character is based on a position of the said ball character in a depth position in said screen. Official Notice is taken that both the concept and the advantages generating 3D graphics via game processors wherein one of said three dimensions is depth (e.g., Z) are well known and expected in the art. Thus, it would have been obvious to one skilled in the art, at the time of the Applicant's invention, to generated said objects processed by said game processor, such as said ball, in 3D, because incorporating a depth component (e.g., during a pitch, hit, etc.) would provide a means of achieving greater realism thus resulting in a more immersive gaming experience for a given player utilizing said system.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter (e.g., information storage medium). See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Claim Objections

6. Claims 39-47 and 51 are objected to because of the following informalities. In regard to claims 39 and 51 the language "when an acceleration ... becomes a predetermined value or more" is considered unclear. For the purposes of applying prior

art said language is considered to read: "when an acceleration ... becomes equal to a predetermined value or greater than a predetermined value." Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 3, 9, 11, 15 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipps et al. (U.S. Patent No. 5, 741, 182) in view Marinelli (U.S. Patent No. 6, 157, 898) and further in view of Ogawa (U.S. Patent No. 4, 742, 264).

9. In regard to claim 1 Lipps et al. teaches a ball game apparatus (Fig. 1) for playing a ball game ("This invention makes baseball and other sports video games more enjoyable by enabling the player to be an active participant in the game." – col. 1, ll. 26-28) by displaying at least a ball character (e.g., ball) on a screen of a display device ("...The player views the pitch as it approaches on the TV or computer screen." – col. 3, ll. 54-62).

Lipps et al. teaches a racket-type input device ("...players participating in a sport such as baseball, golf, tennis, hockey..." – col. 1, ll. 4-12; "...the bat can be replaced by a similar racket, hockey stick, mallet, etc." – col. 4, ll. 18, 19) to be moved in a 3D space by a game player ("In simulated baseball games this primarily comprises acting as the batter and swinging a bat in response to the speed and direction of the pitch as

delivered by the pitcher in the video game." – col. 1, ll. 28-31). It is inherent that a functioning racket (e.g., racket-type input device) has a flat ball hitting portion.

Lipps et al. teaches that the batter's swing is sensed via a centrifugal switch and the appropriate signals are transmitted to a game system. When the bat is swung, the centrifugal force (e.g., acceleration correlated signal) causes a weight to move toward a switch. At swing speeds faster than some critical speed (e.g., predetermined level/value) the weight has enough force to actuate the switch (col. 5, ll. 58-67; col. 6, ll. 12-26). It is noted that centrifugal force is considered to read on a force associated with rotation and that force is considered to be defined as Force = Mass x Acceleration. Thus, it is noted that said centrifugal force is considered to read on containing an acceleration component as it is defined, at least in part, by acceleration. Lipps et al. further teaches that the motion sensing mechanism can also be applied to sense the motion of a ball, such as in football or soccer, and therefore it is noted that said input device is not considered to be limited to a special bat (col. 4, ll. 21-22; col. 7, ll. 43-54).

Lipps et al. fails to explicitly teach a piezoelectric buzzer incorporated in said racket-type input device which outputs an acceleration correlated signal according to an acceleration upon moving said input racket-type device in the 3D space. Marinelli teaches a piezoelectric buzzer (e.g., piezoelectric accelerometer) incorporated in said racket-type input device which outputs an acceleration correlated signal according to an acceleration upon moving said input racket-type device in the 3D space ("This invention relates to measuring motion characteristics of movable objects and more particularly to measuring the speed, spin rate, and curve of a movable object … the invention relates

to measuring the speed, spin rate, and curve of a sporting device, such as a baseball, bowling ball, football, hockey puck, soccer ball, tennis ball, or golf ball by utilizing an embedded, secured, or attached object unit and an external monitor unit." – col. 1, ll. 13-20; "Acceleration sensor network 102 may contain accelerometers of one or more of the following types: piezoelectric, mechanical, micro-machined silicon chip, or any other type small enough to be embedded, secured, or attached in a movable object (col. 8, ll. 45-49; col. 10, ll. 7-39).

It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to incorporate the teachings of Marinelli, which are directed toward the measuring and display of properties related to a movable object, into the apparatus taught by Lipps et al., which is directed towards the measuring and display of properties related to a movable object, thus replacing said centrifugal switch with at least one piezoelectric accelerometer, because Lipps et al. teaches that detecting more information about a would result in a better simulation of the game ("Enhanced forms of the invention may detect more information about the swing, such as speed, height, upward or downward angle, etc. to perform a better simulation of game play." – col. 1, ll. 45-47) and through such incorporation of said sensors taught by Marinelli this would be able to be achieved ("...the invention relates to measuring the speed, spin rate, and curve of a sporting device..." – col. 1, ll. 13-20) thus allowing for display data representative of said measured data to be presented in a more life like manner.

Lipps et al. and Marinelli fail to explicitly teach that said piezoelectric device has a piezoelectric ceramic plate and electrodes respectively formed on main surfaces of

said piezoelectric ceramic plate. Ogawa teaches a piezoelectric buzzer having a piezoelectric ceramic plate and electrodes respectively formed on main surfaces of said piezoelectric ceramic plate (col. 1, ll. 24-37; "The present invention relates to a piezoelectric sound generator which is applied to, e.g., a piezoelectric buzzer or a piezoelectric loudspeaker, and more particularly, it relates to a piezoelectric sound generator including a monolithic sintered body which is obtained by laminating a plurality of ceramic green sheets and electrodes and cofiring the same." – col. 1, ll. 9-15; col. 4, ll. 25-44; Fig. 1).

It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to incorporate the teachings of Ogawa into the apparatus taught by Lipps et al. and Marinelli, because Lipps et al. and Marinelli fail to explicitly teach a specific means of implementing said actual piezoelectric device and thus through such incorporation it would provide not only a means of implementing said device but one which is conventional and thus result in a system which is easier to implement.

Lipps et al. teaches a game processor (e.g., video game console) for receiving the acceleration correlated signal (col. 3, ll. 13-17; Fig. 1) and causing a change in the ball character being displayed on the screen based on the acceleration correlated signal ("The player views the pitch as it approaches on the TV or computer screen. If the player believes that the pitch will be delivered in the strike zone, he can swing the bat 46 in an attempt to 'hit' the ball. If the ball is in the strike zone, and the player has the right timing, a hit will result, and the action of the video game will respond appropriately." – col. 3, ll. 54-62; "...result indicating means comprises electronic means

for providing a moving video depiction of the simulated activity as affected by the player's movement of the object." – col. 7, ll. 42-54). It is implicitly taught that said moving video depiction of the simulated activity as affected by the player's movement of the object (e.g., bat) would include the display of said hit ball when contact is made between said bat and a respective pitched ball as movement of a hit ball is the activity that occurs after contact.

Lipps et al., Marinelli and Ogawa fails to explicitly teach wherein said piezoelectric device is arranged within said racket-type input device in a manner wherein said main surfaces of said piezoelectric ceramic plate are in parallel with a surface of said flat ball hitting portion. It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to position said piezoelectric device within said racket in a manner wherein said main surfaces of said piezoelectric ceramic plate are in parallel with a surface of said flat ball hitting portion, because by placing said device in such a manner would provide the greatest surface area for said device to register contact with said ball thus resulting in more accurate measurements.

10. In regard to claim 3 Lipps et al. teaches an acceleration correlated signal transmitting means for transmitting the acceleration correlated signal in a wireless manner (e.g., infrared signal; col. 2, ll. 54-58) and enabling means for enabling an output of said acceleration correlated signal transmitting means to transmit the acceleration correlated signal when a magnitude level of the acceleration correlated signal (e.g., current force of the weight) is equal to or larger than a predetermined level (e.g., force required to actuate said switch; col. 6, ll. 12-26).

11. In regard to claim 9 Lipps et al. teaches wherein said acceleration correlated signal transmitting means includes an infrared-ray emission element and a light receiving element which receives the infrared-ray from said infrared -ray emission element ("...an infrared signal is transmitted by IR LEDs 10 mounted on a bat. An infrared receiver/decoder 11 is connected to the game machine to pick up the signal from the simulated bat." –col. 2, ll. 52-58).

12. In regard to claim 11 Lipps et al. fails to explicitly teach wherein said signal output means includes at least one pair of acceleration sensors which are provided so as to sandwich an origin, and evaluates a moving speed of said input device in accordance with a sum of detection values of said pair of acceleration sensors and a rotating speed of said input device in accordance with a difference of said detection values of aid pair of acceleration sensors.

Marinelli teaches a signal output means which includes at least one pair of acceleration sensors which are provided so as to sandwich an origin, and evaluates a moving speed of said input device in accordance with a sum of detection values of said pair of acceleration sensors and a rotating speed of said input device in accordance with a difference of said detection values of aid pair of acceleration sensors ("Multiple sensors should be employed in order to most accurately measure centrifugal force due to rotation, if that rotation can occur along an infinite number of axes through the center of a moving object, such as a baseball ... measurements from all three sensors should be used along with trigonometric relationships to derive the true centrifugal force ... For example, in a baseball pitch, the point at which a spin event is detected in the windup

and release of the baseball will affect the speed calculation..." – col. 10, ll. 7-39; "For a rotating sphere, such as a baseball, the mechanical g-force sensor switch network would optimally consist of a pair of diametrically opposed switches along each of two orthogonal axes. For the most accurate measurement in a sphere that can rotate along any imaginary axis through the center of the sphere, at least three g-force proportional output sensors should be used, each lying along a radius that is perpendicular to the radii along which the other two sensors lie, where the radii emanate from the center of the sphere..." – col. 18, ll. 18-29; col. 19, ll. 22-27). It is noted that said sensors are considered to sandwich the origin, as illustrated in Figs. 4A, 4C, 4D. It is further noted that the gathering of measurements from all three sensors along with trigonometric relationships to derive the true centrifugal force is considered to read on a summation of data. The motivation disclosed in the rejection of claim 1 is incorporated herein.

13. In regard to claim 15 Lipps et al. teaches: if the ball is in the strike zone and the player has the right timing a hit will result and the action of the video game will respond appropriately; if the player's swing is too early or too late the batter will be charged with a strike (col. 3, ll. 57-62). It is noted that for a hit to occur based on the "right timing" the timing of both a bat and ball must coincide. It is inherent that a hit ball will have a moving direction (e.g., parameter of movement) based on, at least in part, the object or objects used to hit said ball.

Lipps et al. fails to explicitly teach wherein said position of said ball character (e.g., during a pitch, hit, etc.) has a depth component (e.g., Z coordinate). Official Notice is taken that both the concept and the advantages of representing objects in

video games in 3D, where one of said three dimensions is depth (e.g., Z), are well known and expected in the art. Thus, it would have been obvious to one skilled in the art, at the time of the Applicant's invention, to represent objects utilized in the video game taught by Lipps et al. (e.g., such as a baseball and/or baseball player) in 3D, because through the incorporation of depth it would provide a means of achieving greater realism, which is what Lipps et al. is directed toward (e.g., realism; Lipps et al. – col. 1, ll. 39-44), thus resulting in a more immersive gaming experience for a given player utilizing said system.

14. In regard to claim 49 Lipps et al. teaches the batter's swing is sensed via a centrifugal switch and the appropriate signals are transmitted to a game system. When the bat is swung, the centrifugal force (e.g., acceleration correlated signal) causes a weight to move toward a switch. At swing speeds faster than some critical speed (e.g., predetermined level/value) the weight has enough force to actuate the switch (col. 5, ll. 58-67; col. 6, ll. 12-26). If the ball is in the strike zone and the player has the right timing a hit will result and the action of the video game will respond appropriately. If the player's swing is too early or too late the batter will be charged with a strike (col. 3, ll. 57-62). It is noted that for a hit to occur based on the "right timing" the timing of both a bat and ball must coincide. It is inherent that a hit ball will have a moving direction (e.g., parameter of movement) based on, at least in part, the object or objects used to hit said ball.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lipps et al. (U.S. Patent No. 5, 741, 182), Marinelli (U.S. Patent No. 6, 157, 898) and Ogawa

(U.S. Patent No. 4, 742, 264), as applied to claims 1, 3, 9, 11, 15 and 49, in view of Lipson (U.S. Patent No. 5, 435, 554).

16. In regard to claim 4 Lipps et al. implicitly teaches that said game system comprises a processor, wherein said processor includes at least an operation processing means, image processing means and memory (col. 6, ll. 1-7). However, Lipps et al. and Marinelli fail to explicitly teach: wherein said processor includes a sound processing means; said operation processing means executing a program code stored in an information storage medium and calculating at least a position, moving direction and speed of the ball character on the basis of an acceleration correlated signal outputted from said signal output means; said image processing means generates image information including the ball character by use of image data stored in said information storage medium under control of said operation processing means; said sound processing means reproducing sound by use of sound data stored in said information storage medium under control of said operation processing means; said memory being used for at least said operation processing means to hold a process and result of an operation.

Lipson teaches a computer 42 having six processes which are implemented as combinations of computer hardware and software: pitch selection process 44, hit/miss determination process 45 and hit-ball trajectory process 46, animation model process 43, video process 47 and audio process 49 (col. 5, ll. 27-42; Fig. 2). It is noted processes 44-46 are considered operation processing means and processes 43 and 47 are considered image processing means. Lipson teaches that pitch selection process

44 includes a series of instructions stored in a memory unit (e.g., information storage medium) for inputting user data via the animation process 43 and calculating the appropriate pitch trajectory based on the user inputs (col. 5, ll. 46-61). Lipson teaches that audio process 49 generates appropriate sound signals for sounds such as crowd noise, bat and ball contact noise, ball and glove contact noise, and the like, wherein said sound signals are transduced by a speaker 50 thus providing audio feedback to the user 41 (col. 6, ll. 8-14). Lipson teaches the ball's trajectory (e.g., direction and position) is determined by the initial hit angle and the initial velocity (e.g., speed) of the ball coming off the bat (col. 15, ll. 59-68; col. 16, ll. 1-39). Lipson teaches that once the result of the hit ball is determined, the appropriate animation sequence is displayed on the video screen to include the previously hit ball and the advancement of any runners on base (col. 12, ll. 32-42). It is inherent that image data is stored in memory.

It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to incorporate the teaching of Lipson into the apparatus taught by Lipps et al., Marinelli and Ogawa, because Lipps et al. teaches using additional information about the swing to perform a better simulation of the game (Lips–et al. – col. 1, ll. 45-47) and the determination of position, moving direction and speed of a given ball which has been hit as the result of a given swing, as taught by Lipson, would provide a more realistic baseball simulation with regard to both sight and sound (Lipson – col. 16, ll. 40-50).

17. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lipps et al. (U.S. Patent No. 5, 741, 182), Marinelli (U.S. Patent No. 6, 157, 898), Ogawa (U.S.

Patent No. 4, 742, 264) and Lipson (U.S. Patent No. 5, 435, 554), as applied to claim 4, in view of Tosaki et al. (U.S. Patent No. 6, 312, 335 B1).

18. In regard to claim 5 Lipps et al. teaches that the signals of said input device are conveyed to a typical commercially available game machine 1 (col. 2, ll. 29-33, 51-53). However, Lipps et al., Marinelli and Lipson fail to explicitly teaching wherein said information storage medium includes a non-volatile semiconductor memory. Tosaki et al. teaches a game processing device 2 (e.g., game machine), where said device comprises a CPU 201, RAM 202 and ROM 203 (e.g., read-only memory). Said ROM 203 (e.g., non-volatile memory) stores initialization programs for when the power is switched on and image data (col. 8, ll. 24-27, 31-34).

It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to incorporate non-volatile memory for use in a game machine, as taught by Tosaki et al., into the apparatus taught by Lipps et al., Marinelli, Ogawa and Lipson, because non-volatile memory is a conventional type of memory used in computer systems and through the use of said memory it would allow for said machines to properly operate, for example, when they are powered on from a powered off state.

19. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lipps et al. (U.S. Patent No. 5, 741, 182), Marinelli (U.S. Patent No. 6, 157, 898) and Ogawa (U.S. Patent No. 4, 742, 264), as applied to claims 1, 3, 9, 11, 15 and 49, in view of Zur et al. (U.S. Patent No. 5, 833, 549).

20. In regard to claim 10 Lipps et al. teaches: if the ball is in the strike zone and the player has the right timing a hit will result and the action of the video game will respond

appropriately; if the player's swing is too early or too late the batter will be charged with a strike (col. 3, ll. 57-62). It is noted that for a hit to occur based on the "right timing" the timing of both a bat and ball must coincide. It is inherent that a hit ball will have a moving direction (e.g., parameter of movement) based on, at least in part, the object or objects used to hit said ball.

However, Lipps et al. and Marinelli fail to explicitly teach detecting a timing that said acceleration correlated signal reaches a peak value. Zur et al. teaches calculating the peak speed of said input device and then evaluating a parameter for the change of said ball character on the basis of at least the peak value of the moving speed of said input device ("...while the factors that determine the path of the ball (actual or virtual) after its encounter with the game implement are many and varied, the azimuth angle β plays an important role in determining whether the ball will go into the left, center or right field, whereas the elevation angle α has much to do, together with the exact point of impact of the ball on the surface of the implement 12 (which is round in the case of the bat), with the rate at which the ball is lifted (or grounded) after the impact, and hence with the distance traveled by the ball for a given speed of the implement 12..." – col. 10, ll. 8-18, 49-63). It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to incorporate the teachings of Zur et al. into the apparatus taught by Lipps et al., Marinelli and Ogawa, because by calculating the peak speed of the input device it would reliably predict the trajectory of the ball (Zur et al. – col. 2, ll. 12-15) and thus present a more realistic simulation.

21. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lipps et al. (U.S. Patent No. 5, 741, 182), Marinelli (U.S. Patent No. 6, 157, 898) and Ogawa (U.S. Patent No. 4, 742, 264), as applied to claims 1, 3, 9, 11, 15 and 49, in view of Nomura et al. (U.S. Patent No. 5, 779, 555).

22. In regard to claim 16 Lipps et al. and Marinelli fail to explicitly teach determining a moving direction by further taking the course of said ball character into account. Nomura et al. teaches determining a moving direction by further taking the course of said ball character into account (col. 1, ll. 5-7; "...The practice apparatus includes a triaxial acceleration sensor mounted on the swing type athletic equipment, a discharge direction detection means for detection of a direction of discharge of the object hit, a data processing unit for processing acceleration data in three detection-axis directions outputted from the triaxial acceleration sensor and data outputted from the discharge direction detection means, and a display means for displaying results of processing by the data processing unit." – col. 2, ll. 26-38; "...The practice apparatus may further include a ball discharge direction detection means for detecting a direction of discharge of a golf ball hit, wherein the data processing unit operates a direction of discharge of the golf ball, rotation thereof and a flying distance thereof based on the acceleration data in the three detection-axis directions outputted from the triaxial acceleration sensor..." – col. 2, ll. 50-67; col. 5, 27-35). It is noted said direction, rotation and distance information for a given ball, which is based on said acceleration data, are all considered to read on course information for said ball.

It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to incorporate the teachings of Nomura et al. into the apparatus taught by Lipps et al., Marinelli and Ogawa, which is directed towards the measuring and display of properties related to a movable object, because Lipps et al. teaches using more information about the swing to perform a better simulation of the game (Lipps et al. – col. 1, ll. 45-47) and through such incorporation it would provide a more accurate result for said object (Nomura et al. – col. 8, ll. 21-24), thus presenting a more realistic simulation. It is noted that while Nomura et al. teaches golfing said teachings are not limited to those of golf (col. 7, ll. 50-56).

23. Claim 12, 18, 19, 22-24, 26, 32, 35-37, 39, 41 and 44-48 rejected under 35 U.S.C. 103(a) as being unpatentable over Lipps et al. (U.S. Patent No. 5, 741, 182).

24. In regard to claim 12 Lipps et al. teaches a ball game apparatus (Fig. 1) for playing a ball game ("This invention makes baseball and other sports video games more enjoyable by enabling the player to be an active participant in the game." – col. 1, ll. 26-28) by displaying at least a ball character (e.g., ball) on a screen of a display device ("...The player views the pitch as it approaches on the TV or computer screen." – col. 3, ll. 54-62).

Lipps et al. teaches an input device (e.g., simulated bat; "...players participating in a sport such as baseball, golf, tennis, hockey..." – col. 1, ll. 4-12; "The baseball accessory device typically comprises a simulated baseball bat 4 with a built-in centrifugal or other inertial switch 5 to sense the timing of the player's swing..." – col. 2, ll. 35-45; "...the bat can be replaced by a similar racket, hockey stick, mallet, etc." – col.

4, ll. 18-19) to be moved in a 3D space by a game player ("In simulated baseball games this primarily comprises acting as the batter and swinging a bat in response to the speed and direction of the pitch as delivered by the pitcher in the video game." – col. 1, ll. 28-31), said input device having a plurality of surfaces different from each other (e.g., Fig. 1 wherein one portion of said bat's surface contains a button panel 6 while other portions of said bat's surface do not contain said button panel 6).

Lipps et al. teaches that the batter's swing is sensed via a centrifugal switch and the appropriate signals are transmitted to a game system. When the bat is swung, the centrifugal force (e.g., acceleration correlated signal) causes a weight to move toward a switch. At swing speeds faster than some critical speed (e.g., predetermined level/value) the weight has enough force to actuate the switch (col. 5, ll. 58-67; col. 6, ll. 12-26). It is noted that centrifugal force is considered to read on a force associated with rotation and that force is considered to be defined as Force = Mass x Acceleration. Thus, it is noted that said centrifugal force is considered to read on containing an acceleration component as it is defined, at least in part, by acceleration. Lipps et al. further teaches that the motion sensing mechanism can also be applied to sense the motion of a ball, such as in football or soccer, and therefore it is noted that said input device is not considered to be limited to a special bat (col. 4, ll. 21-22; col. 7, ll. 43-54).

Lipps et al. teaches a game processor (e.g., video game console) for receiving the acceleration correlated signal (col. 3, ll. 13-17; Fig. 1) and causing a change in the ball character being displayed on the screen based on the acceleration correlated signal ("The player views the pitch as it approaches on the TV or computer screen. If the

player believes that the pitch will be delivered in the strike zone, he can swing the bat 46 in an attempt to 'hit' the ball. If the ball is in the strike zone, and the player has the right timing, a hit will result, and the action of the video game will respond appropriately..." – col. 3, ll. 54-62; "...result indicating means comprises electronic means for providing a moving video depiction of the simulated activity as affected by the player's movement of the object." – col. 7, ll. 42-54). It is noted that for a hit to occur based on the "right timing" the timing of both a bat and ball must coincide. It is inherent that a hit ball will have a moving direction (e.g., parameter of movement) based on, at least in part, the object or objects used to hit said ball. However, Lipps et al. fails to explicitly teach wherein the position of said ball character (e.g., during a pitch, hit, etc.) has a depth component (e.g., Z coordinate). Official Notice is taken that both the concept and the advantages of representing objects in video games in 3D, where one of said three dimensions is depth (e.g., Z), are well known and expected in the art. Thus, it would have been obvious to one skilled in the art, at the time of the Applicant's invention, to represent objects utilized in the video game taught by Lipps et al. (e.g., such as a baseball and/or baseball player) in 3D, because through the incorporation of depth it would provide a means of achieving greater realism, which is what Lipps et al. is directed toward (e.g., realism; Lipps et al. – col. 1, ll. 39-44), thus resulting in a more immersive gaming experience for a given player utilizing said system.

Lipps et al. teaches a plurality of wireless transmitting means for transmitting said acceleration correlated signal (col. 2, ll. 52-58; col. 3, ll. 1-5, 24-30). However, Lipps et al. fails to explicitly teach implementing a plurality of said wireless transmitting means in

said input device and transmitting the acceleration correlate signal from said plurality of wireless transmitting means from different surfaces of said input device. It would have been obvious to one skilled in the art, at the time of the Applicant's invention, to implement a plurality of said wireless transmitting means taught by Lipps et al., instead of just one, into said input device, because through such incorporation it would result in a less error-prone device due to redundancy (e.g., if one transmitting means fails another can take its place and the device will continue to operate).

In light of said incorporation it is noted that that wireless signals are not bound to a particular volume during transmission (e.g., such as a wire) and thus it is noted that said signals are considered to penetrate through various different areas of said input device when transmitted.

25. In regard to claim 18 the rationale disclosed in the rejection of claim 49 is incorporated herein.

26. In regard to claim 19 the rationale disclosed in the rejection of claim 3 is incorporated herein.

27. In regard to claim 22 Lipps et al. teaches said input device including a bat input device (col. 2, ll. 35-45; Fig. 1). Lipps et al. teaches: if the ball is in the strike zone and the player has the right timing a hit will result and the action of the video game will respond appropriately; if the player's swing is too early or too late the batter will be charged with a strike (col. 3, ll. 57-62). It is noted that for a hit to occur based on the "right timing" the timing of both a bat and ball must coincide. It is inherent that a hit ball

will have a moving direction (e.g., parameter of movement) based on, at least in part, the object or objects used to hit said ball.

28. In regard to claim 23 Lipps et al. teaches that said input device includes a racket input device ("...the bat can be replaced by a similar racket, hockey stick, mallet, etc." – col. 4, ll. 18, 19). The rationale disclosed in the rejection of claim 22 is incorporated herein.

29. In regard to claim 24 the rationale disclosed in the rejection of claim 9 is incorporated herein.

30. In regard to claim 26 the rationale disclosed in the rejection of claim 12 is incorporated herein.

31. In regard to claim 32 the rationale disclosed in the rejection of claim 3 is incorporated herein.

32. In regard to claim 35 the rationale disclosed in the rejection of claim 22 is incorporated herein.

33. In regard to claim 36 the rationale disclosed in the rejection of claim 23 is incorporated herein.

34. In regard to claim 37 the rationale disclosed in the rejection of claim 9 is incorporated herein.

35. In regard to claim 39 the rationale disclosed in the rejection of claim 12 is incorporated herein. It is noted that the actuation of said switch and the resulting signal that is generated is considered to read on an "ON signal." It is further noted that the

language "...a timing that said acceleration switch is turned-on..." is considered to read on the time in which said acceleration switch is activated.

36. In regard to claim 41 Lipps et al. teaches wherein said acceleration switch includes a weight which is elastically biased by a spring ("...the centrifugal switch 5 comprises a disc 15, made of steel or other dense material, that moves longitudinally in a guide housing 16. When the bat 4 is swung, the disc 15 is propelled toward the outer end of the bat 4 pressing a switch actuator 17 against a return spring 18 to close or open a switch 19 in the adjacent circuitry..." – col. 2, ll. 36-44).

37. In regard to claim 44 the rationale disclosed in the rejection of claim 22 is incorporated herein.

38. In regard to claim 45 the rationale disclosed in the rejection of claim 23 is incorporated herein.

39. In regard to claim 46 Lipps et al. teaches an acceleration correlated signal transmitting means for transmitting the acceleration correlated signal in a wireless manner (e.g., infrared signal; col. 2, ll. 54-58).

40. In regard to claim 47 the rationale disclosed in the rejection of claim 24 is incorporated herein.

41. In regard to claim 48 the rationale disclosed in the rejection of claim 9 is incorporated herein. Lipps et al. teaches the use of a plurality of infrared light emitting diodes 10 (col. 2, ll. 43-44).

42. Claims 14, 27 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipps et al. (U.S. Patent No. 5, 741, 182), as applied to claims 12, 18, 19, 22-24, 26, 32, 35-37, 39, 41 and 45-48, in view of Nomura et al. (U.S. Patent No. 5, 779, 555).

43. In regard to claim 14 the rationale disclosed in the rejection of claim 16 is incorporated herein.

44. In regard to claim 27 the rationale disclosed in the rejection of claim 16 is incorporated herein.

45. In regard to claim 40 the rationale disclosed in the rejection of claim 16 is incorporated herein.

46. Claims 17, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipps et al. (U.S. Patent No. 5, 741, 182), as applied to claims 12, 18, 19, 22-24, 26, 32, 35-37, 39, 41 and 44-48, in view of Zur et al. (U.S. Patent No. 5, 833, 549).

47. In regard to claim 17 the rationale disclosed in the rejection of claim 10 is incorporated herein.

48. In regard to claim 30 the rationale disclosed in the rejection of claim 10 is incorporated herein.

49. In regard to claim 31 the rationale disclosed in the rejection of claim 10 is incorporated herein.

50. Claims 20, 33, 42, 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipps et al. (U.S. Patent No. 5, 741, 182), as applied to claims 12, 18, 19, 22-24, 26, 32, 35-37, 39, 41 and 44-48, in view of Lipson (U.S. Patent No. 5, 435, 554).

51. In regard to claim 20 the rationale disclosed in the rejection of claim 4 is incorporated herein.

52. In regard to claim 33 the rationale disclosed in the rejection of claim 4 is incorporated herein.

53. In regard to claim 42 the rationale disclosed in the rejection of claim 4 is incorporated herein.

54. In regard to claim 50 the rationale disclosed in the rejection of claims 12 and 20 are incorporated herein.

55. In regard to claim 51 the rationale disclosed in the rejection of claims 39 and 42 are incorporated herein.

56. Claims 21, 34 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipps et al. (U.S. Patent No. 5, 741, 182) and Lipson (U.S. Patent No. 5, 435, 554), as applied to claims 20, 33, 42, 50 and 51, in view of Tosaki et al. (U.S. Patent No. 6, 312, 335 B1).

57. In regard to claim 21 the rationale disclosed in the rejection of claim 5 is incorporated herein.

58. In regard to claim 34 the rationale disclosed in the rejection of claim 5 is incorporated herein.

59. In regard to claim 43 the rationale disclosed in the rejection of claim 5 is incorporated herein.

60. Claims 25, 28, 29 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lipps et al. (U.S. Patent No. 5, 741, 182), as applied to claims 12, 18,

19, 22-24, 26, 32, 35-37, 39, 41 and 44-48, in view Marinelli (U.S. Patent No. 6, 157, 898).

61. In regard to claim 25 the rationale disclosed in the rejection of claim 11 is incorporated herein.

62. In regard to claim 28 the rationale disclosed in the rejection of claim 1 is incorporated herein.

63. In regard to claim 29 the rationale disclosed in the rejection of claim 1 is incorporated herein.

64. In regard to claim 38 the rationale disclosed in the rejection of claim 11 is incorporated herein.

Response to Arguments

65. Applicant's remarks with respect to claims 1, 3-5, 9-11, 15, 16 and 49 have been considered but are moot in view of the new ground(s) of rejection. Applicant is directed to the respective above rejections.

66. In response to Applicant's remarks that Lipps et al. teaches a bat with no flat ball hitting portion it is noted that Lipps et al. fails to teach the exclusion of input devices other than a bat. In fact Lipps et al. teaches: "...players participating in a sport such as baseball, golf, tennis, hockey..." – col. 1, ll. 4-12; "...the bat can be replaced by a similar racket, hockey stick, mallet, etc." – col. 4, ll. 18, 19. It is inherent that a functioning racket (e.g., racket-type input device) has a flat ball hitting portion.

67. In response to Applicant's remarks in regard to claims 12, 26 and 39 that the references fail to show certain features of Applicant's invention, it is noted that the

features upon which Applicant relies (e.g., determining parameters of a ball character after a hit) are not recited in the rejected claim(s) 12, 26, and 39. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regardless, it is noted that Lipps et al. teaches a game processor (e.g., video game console) for receiving the acceleration correlated signal (col. 3, ll. 13-17; Fig. 1) and causing a change in the ball character being displayed on the screen based on the acceleration correlated signal ("The player views the pitch as it approaches on the TV or computer screen. If the player believes that the pitch will be delivered in the strike zone, he can swing the bat 46 in an attempt to 'hit' the ball. If the ball is in the strike zone, and the player has the right timing, a hit will result, and the action of the video game will respond appropriately..." – col. 3, ll. 54-62; "...result indicating means comprises electronic means for providing a moving video depiction of the simulated activity as affected by the player's movement of the object." – col. 7, ll. 42-54). It is noted that for a hit to occur based on the "right timing" the timing of both a bat and ball must coincide. It is inherent that a hit ball will have a moving direction (e.g., parameter of movement) based on, at least in part, the object or objects used to hit said ball. However, Lipps et al. fails to explicitly teach wherein the position of said ball character (e.g., during a pitch, hit, etc.) has a depth component (e.g., Z coordinate). Official Notice is taken that both the concept and the advantages of representing objects in video games in 3D, where one of said three dimensions is depth (e.g., Z), are well known and expected in the art.

Thus, it would have been obvious to one skilled in the art, at the time of the Applicant's invention, to represent objects utilized in the video game taught by Lipps et al. (e.g., such as a baseball and/or baseball player) in 3D, because through the incorporation of depth it would provide a means of achieving greater realism, which is what Lipps et al. is directed toward (e.g., realism; Lipps et al. – col. 1, ll. 39-44), thus resulting in a more immersive gaming experience for a given player utilizing said system.

68. In response to Applicant's remarks that the references fail to show certain features of Applicant's invention, it is noted that the features upon which Applicant relies (e.g., detecting a rotational force or detecting parallel displacement) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). It is noted that a claimed rotating speed is not considered to read on a rotating force.

69. It is noted that the common knowledge or well-known in the art statements disclosed in the prior Office Action are taken to be admitted prior art because the Applicant failed to traverse the Examiner's assertion of Office Notice (MPEP § 2144.03(c)).

70. Applicant's remarks have been fully considered but they are not persuasive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER-ANTHONY PAPPAS whose telephone number is 571-272-7646. The examiner can normally be reached on M-F 9:00AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter-Anthony Pappas/
Primary Examiner, Art Unit 2628